

knowledge of insects would deal with technical points of entomology as is here done; the frontal suture is mixed up with the frontal lunule, the different venation systems are not tabulated, the value of the antennæ in classification is not made clear, there is an error about peripneustic, and so on. The volume, so far as the entomology goes, is largely a selection from Sharp's "Insects" (Cambridge Natural History) and Alcock's "Entomology for Medical Officers." These excellent works are, of course, listed in the references, but there does not seem to be any obvious reason for summarising parts of them.

The medical and the entomological student will find the references valuable. The doctor or sanitary officer who is not seeking special knowledge will find the volume a surprising revelation of the great importance attaching to this branch of entomology, and we wish it might do much to educate public opinion on this very vital point.

That is so more especially in England, where it is impossible to realise the part played by insects and the importance of these diseases. In this respect accuracy of technical detail and an up-to-date summary of the scientific aspect is less important than picturesque description and lucid writing, both characteristics of this volume. We commend it to the public which reads general science, and to medical men desirous of keeping their knowledge of this subject up to date. It is well illustrated and produced, and an exceedingly readable volume.

(2) The author has put together a series of abstracts of published works on various phases of economic entomology under chapter headings such as "Insects and Human Disease," "Insects and Plants," "Beneficial Insects," and so on. In the main, the work to which attention is given is that of the American worker, and the volume as a whole is very largely taken up with selections from recent American authors. The selection of subjects is curiously uneven: quite obscure household pests are mentioned, while really serious ones are omitted; the bee as a honey-producer and the silk-worms are omitted while the Chinese wax-insect is discussed. In agricultural and horticultural entomology one gets the impression that, while much progress is being made in America, none is being made elsewhere. The Americans are quoted as the pioneers in the use of parasites to control pests, while the pioneer work of Perkins in Hawaii is not referred to.

The author lays no claim to first-hand knowledge of the subject, but has clearly read voluminously from American works. His abstracts are well written, but the accuracy due to personal knowledge of the subject is conspicuously absent.

NO. 2378, VOL. 95]

No one would contend, for instance, that "the control of scale insects and aphides, therefore, in such districts practically resolves itself into control of the ants," though the Argentine ant is, of course, a factor in spreading scale insects; nor would anyone conversant with the literature say of the codlin moth, "no insect of economic importance has received so much attention from entomologists." The curling of the leaves of *Prunus* is not caused by the fungus that lives on the secretion of the aphides; only a portion of the Coccidæ cover themselves with a scale; in no insect is the duration of the life-cycle to be "counted in hours"—and so on. It is far too easy to find misleading statements in general, which would not occur to an author who had other than a purely book knowledge. We would have suggested that to the title might be added the words "The romance of," for one feels that it is the "romantic" element of the journalist that guides the choice of subject; picturesque detail and local colouring is the object sought, and no methodical attempt has been made really to "compile a concise summary of the varied relations of insects and man," as the author claims (page 21). A great deal is said about certain sections of the subject, but the ground is not covered in any complete or methodical manner.

It is probably inevitable that a new subject will be exploited by the journalist seeking picturesque "copy," but we hope it will not again be presented in a serious form calculated to mislead the student into thinking he has a concise summary of the subject; and if we must have such books as this, let us hope they will take into account the work done in this country and in our Colonies, every whit as good, though less blatantly set forth in sober reports, with no touch of the American journalese. We have to do a great deal yet to educate the British public (particularly the ruling class) to make them realise that there is a big future for economic entomology, but it will not be done by quotation from American entomologists, and the implication that they and they only can do the work.

H. M. L.

CULTURE AND METAPHYSICS.

- (1) *German Culture: the Contribution of the Germans to Knowledge, Literature, Art, and Life.* Edited by Prof. W. P. Paterson. Pp. x+384. (London: T. C. and E. C. Jack, 1915.) Price 2s. 6d. net.
- (2) *The Principles of Understanding: an Introduction to Logic from the Standpoint of Personal Idealism.* By H. Sturt. Pp. xiv+302. (Cambridge: At the University Press, 1915.) Price 5s. net.

(3) *Essays Towards a Theory of Knowledge*. By A. Philip. Pp. 126. (London: G. Routledge and Sons, Ltd., 1915.) Price 2s. 6d. net.

(1) THE term *Kultur* is the equivalent of our "civilisation"; *Kulturgeschichte* is "history of civilisation." In a secondary sense the German term is narrowed to mean "the organisation of a people's life in which the ideals of religion, morality, and science come to realisation." The popular present-day use of the term, therefore, actually coincides with our "culture," "civilisation viewed on its higher side." It is only Chauvinist writers who have reduced it, at a very ill-chosen time, to the connotation of morality.

The popularly written essays, which Prof. Paterson has brought together, on Germany's contribution to the world's culture have the merit of impartiality. It is a mistake to suppose, by way of a reaction from Germany's pretensions to pre-eminence, that her work is second-rate and second-hand, however industrious.

In philosophy Mr. Lindsay observes that the German genius is supreme in the production of metaphysical systems. Such work suits the German mind, which has produced both "the dry-as-dust and the romantic fairy-tale." "The first question a German asks about a philosopher is—'What is his *Weltanschauung*?'—his "world-vision." Could we talk about the world-vision of Locke or Hume? Mr. Lindsay is probably right in regarding German philosophy as "the most characteristic contribution which Germany has made to the common treasure of the human spirit." A typical feature of it is the passion for monism, Kant alone being an exception.

The best and most detailed essay in this book is that on science by Prof. J. Arthur Thomson. "It is probable that the Germans in their normal condition have the most orderly minds in Europe," but they have made far-reaching discoveries as well. Prof. Thomson sketches fully the course of investigation in biology, physics, and chemistry during the last hundred years, and places the German contributions in the order of their appearance, so that the reader may estimate their importance and compare them with those of other peoples. In biology the cell-theory, which "must be placed beside the evolution theory as one of the foundation-stones of modern biology," was almost entirely the work of Germans. An interesting episode of chemistry is this:—

"Sixty years ago an obscure German chemist obtained an oily liquid from coal-tar oil, which gave a beautiful tint with calcium chloride; five years later, another separated a similar liquid from a derivation of coal-tar oil."

Hofmann identified these with Zinin's oil of indigo, and called them by his term "Anilin." Perkin made the practical application of this knowledge, and

"the industry started by Perkin's discovery passed from Britain to Germany, but the honours of scientific discovery were shared by both countries."

Prof. Thomson concludes with a useful qualification:—

"the probable fallacy of using the history of science as an index of national or racial qualities," but he notes that "the reading public for concrete science is enormously greater in Germany than in Britain, and that there is a stronger faith (which we believe to be warranted) in what science can do for the amelioration of human life."

In Prof. Sadler's account of education two points may be marked:—

"England hesitated between two opposing theories, the theory of State control and the theory of group autonomy under the general supervision of the State. Germany came to a decisive conclusion on this fundamental question of procedure. Great Britain (and particularly England) remained divided in conviction about it, and therefore irresolute in policy. Germany standardised her education upon a system. Britain, distrustful of State control, compromised."

Not only English, but German observers have often remarked that the intellectual apprehension of the average educated German is ten times quicker than that of the average educated Englishman. But the intellectual judgment of the average educated German is most uncertain and weak, and often most conventional. The German will form ten foolish inductions to the Englishman's one. This corresponds to a real difference in temperament, between the cool, phlegmatic Briton and the emotional German. One result of this emotionalism seems to be the extraordinary solidarity of both German culture and German national feeling; yet British solidarity is as real, though longer-circuited.

(2) After the results of understanding, the principles of it, and the principles of the reality which we try to understand. Mr. Sturt writes from the point of view of personal idealism, and treats logic dynamically. His main text is the creative, inventional power of understanding. The foresight of understanding he advances as the strongest argument against epiphenomenalism, such as that of Shadworth Hodgson, according to which

"all the facts of consciousness are negligible by-products of physico-chemical energies in the

nervous system." So Mr. Sturt says "no physico-chemical energy ever foresaw anything. It is consciousness, then, that foresees and plans."

But he does not explain consciousness. Consciousness, again, is characterised by passion; by neglecting this fact and the fact that it is "total-working," intellectualism "has obscured the true nature of intelligence."

On the fundamental nature of consciousness, creative and passion-wrought, Mr. Sturt has a big assumption, already made by McDougall, viz., "a true logic is impossible without animism." He has some interesting observations and phrases:—

"Felicitous naming, felicitous phrasing add enormously to the power of thought," especially, we may add, when thought is being thought about. Thus, the soul is not weak and shadowy, a slender breath, *animula vagula blandula*, nor a mere point; "a human soul is very large"; it has a wealth of faculties "correspondent to the richness of the world."

If the soul is a big thing, then the mental sciences, including logic, are bigger than the writers of the past would lead us to suppose. But Prof. Stout has said, "to the psychologist the conception of a soul is not helpful." Further, there is a social soul; a society of a hundred individuals is more than a hundred souls. On the "generation" of souls he says:—

"There must be some source of soul-life . . . we cannot say that we are not surrounded by a soul-element, and that the whole universe is not pervaded by soul-life whence individual souls come into being as they are wanted."

This is precisely the doctrine of the Dayaks and other savages of the East Indies.

(3) "Dynamic" is nowadays a blessed word. It assists Mr. Philip towards a theory of knowledge. In this, the ultimate reality is "potential energy." "Sensation is obstructed action"; "sensations only mark the interruptions in the dynamic activity in which we as potent beings partake." But these obstructions do not constitute the essence of our experience, they merely denote it. For this essence we must look to our activity as such. Space is the absence of physical obstruction. Time is the periodicity of natural force. Mr. Philip has some useful inferences drawn from the experiences of the blind, recently recorded by M. Pierre Villez. Particularly significant is his insistence throughout the book (which contains four short essays) on the necessity for metaphysics to found upon physics, a necessity hitherto almost totally ignored.

A. E. CRAWLEY.

OUR BOOKSHELF.

Canadian Institute: General Index to Publications, 1852-1912. Compiled and edited by J. Patterson (Hon. Secretary). Pp. 518. (Toronto: University Press, 1914.) Price 5.00 dollars.

THE pioneers of a new country are mainly pre-occupied in developing its material resources, but there is always a remnant faithful to the intellectual life. Cut off from the companionship of their peers, these men gather themselves into local societies, and adopt the common form of regular meetings for the reading of papers.

Some two score such societies were scattered through the Dominion when, in 1882, the Marquis of Lorne founded the Royal Society of Canada. The older societies were not superseded, but affiliated, and they report annually by delegates on their work for the year. The most important of them were the Natural History Society of Montreal (founded 1827) and the Canadian Institute of Toronto (1852). It is this latter body which now issues, in a handsome volume of 518 double-column pages, an index to its 35 volumes of publications from 1852-1912.

The index has been prepared with much care and labour, the most important papers being indexed almost by paragraphs, and as it is arranged like a dictionary, alphabetically, it ought to be easy to find anything to which there is the slightest clue.

The pity of all such series is that they become the burial-ground of much that is valuable beneath heaps of rubbish. There are hundreds of references here to "papers" (especially in the early volumes) which are merely translations of some passage from the classics, fugitive reviews of forgotten books, scraps of antiquarian lore from anywhere on earth except Canada. But the real core of value is to be found in the original contributions on the history, customs, and folklore of the rapidly vanishing Indian tribes; the early history and settlement of Canada; its geology, minerals, botany, flora and fauna, with their consequent biological problems. Even in physics, though most that is worth while finds its way to European publications, there are observations special to Canada (*e.g.*, peculiar ice-formations) which would have found no record without the labours of her own pioneers of science. Distinguished names like those of Sir Daniel Wilson, Sir J. W. Dawson, and Goldwin Smith are a guarantee that there is much in these Proceedings which ought not to be smothered. This index will enable any student, in spite of the dust, to rescue whatever concerns his own line of study.

Towards Racial Health. By Norah H. March. With a Foreword by Prof. J. A. Thomson. Pp. ix + 326. (London: G. Routledge and Sons, Ltd., 1915.) Price 3s. 6d. net.

In this little book Miss March deals with one of the most serious difficulties which lies in the path of those engaged in training the young. Children are taught elementary rules of health in relation to food, drink, and exercise, but sex is seldom